

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Currently Amended) A transistor device structure formed on a substrate, the substrate defining a substantially horizontal plane, the ~~semiconductor~~ transistor device structure comprising:

a source region;

a drain region;

a gate electrode disposed on the substrate, said gate electrode positioned vertically between said source region and said drain region; and

a plurality of semiconducting nanotubes, each of said semiconducting nanotubes including a first end electrically coupled with said source region, a second end electrically coupled with said drain region, and a channel region extending vertically through said gate electrode between said source region and said drain region, and said gate electrode configured to receive a control voltage effective to regulate current flow through said channel region between said source region and said drain region.

2. (Currently Amended) The transistor device structure of claim 1 wherein said source region is composed of a catalyst material effective for growing said semiconducting nanotubes.

3. (Currently Amended) The transistor device structure of claim 1 wherein said drain region is composed of a catalyst material effective for growing said semiconducting nanotubes.

4. (Currently Amended) The transistor device structure of claim 1 further comprising:  
an insulating layer disposed between said drain region and said gate electrode.
5. (Currently Amended) The transistor device structure of claim 1 further comprising:  
an insulating layer disposed between said source region and said gate.
6. (Previously Presented) The transistor device structure of claim 1 wherein said semiconducting nanotubes are composed of arranged carbon atoms.
7. (Cancelled)
8. (Previously Presented) The transistor device structure of claim 1 wherein said semiconducting nanotubes are oriented substantially perpendicular to said horizontal plane.
- 9-34. (Cancelled)